

§ 31. INSECT DEFORMITIES. Mr. H. K. MORRISON showed a specimen of *Erynnis icelus*, which had a nick in the front margin of each fore-wing, perfectly symmetrical on the two wings. It seems as if the pupa must have received some wound just at the point where the two fore-margins meet, which corresponds to the position of the notches on these wings.

(Oct. 9, 1874.)

## BIBLIOGRAPHICAL RECORD.

(Continued from page 136.)

The date of publication, here given in brackets [ ], marks the time at which the work was received by the Editor, unless an earlier date of publication is known to him. An asterisk \* before a title is the Recorder's certificate of accuracy of quotation. Corrections of errors and notices of omissions are solicited. — B. PICKMAN MANN.

Nos. 955 to 966 are from **Field and Forest**, v. 3.

\* 955. JA: S. JOHNSON. A season's collecting in Cato-  
cala. p. 64-66. [Dec., 1877.]

About 446 specimens of 29 species of *Catocala* collected [at Frankford, Pa.] between 9 July and 10 Oct., 1877, as follows:

	<i>Lirioden-</i> <i>dron.</i>	<i>Acer.</i>	<i>Robinia.</i>	<i>Nyssa.</i>	<i>Fraxinus.</i>	<i>Juglans.</i>	<i>Carya.</i>	<i>Quercus.</i>	<i>Castanea.</i>	<i>Fagus.</i>	<i>Salix.</i>	<i>Brush,</i> <i>Stumps, &amp;c.</i>
42 ilia J. 9-A. 30								3		42		
3 grynea J. 9-J. 24								1		7		
8 ultronia J. 12-A. 13												
20 serena J. 17-S. 4							20					
47 obscura J. 17-A. 31							47					
4 epione J. 17-J. 25								3	1			
2 minuta J. 21		2										
13 parta J. 21-O. 10			3			3					7	
1 tristis J. 21		1										
25 neogama J. 23-S. 25			2					2		20	1	
42 paleogama J. 24-S. 19										42		
22 relecta J. 25-S. 4							3	18	1			
4 subnata J. 25-A. 14		1							1	2		
19 habilis J. 25-S. 4		2					4	12	1			
9 insolabilis J. 25-A. 31								9				
37 flebilis J. 26-S. 19							7	21	9			
1 ponderosa J. 26										1		
7 cara A. 6-S. 13									1		3	3
6 cerogama A. 8-A. 27			1		1			4				
47 desperata A. 9-S. 19		6					8	24	9			
5 judith A. 9-A. 13							5					
7 piatrix A. 10-A. 30						7			1			
6 innubens A. 10-A. 31				1								4
43 amatrix A. 14-O. 6			4								39	2
2 antinympha A. 15-A. 16												
1 concumbens A. 16										1		
2 phalanga A. 18-A. 20										2		
6 robinsoni A. 29-A. 31							5	1				
3 unijuga S. 4-S. 21								1			2	
446	12	6	5	1	3	7	99	102	23	117	52	9

The search began 20 June, but no specimens were found until 9 July. In pleasing contrast to the ways of sham scientists who collect only good specimens or uncommon species, Mr. Johnson collected all the specimens he could get.

## Field and Forest, v. 3.

\* 956. J<sup>A</sup>: S. JOHNSON. Setting blocks for Lepidoptera. p. 83-85, fig. 20-22. [Dec., 1877.]

Description of blocks for setting the wings of Lepidoptera, and how to use them; other descriptions, by C: R. Dodge, with figures, appended.

\* 957. W: H. EDWARDS. Descriptions of new species of Diurnal Lepidoptera found in North America. p. 86-89. [Dec., 1877.]

Describes *Argynnis macaria* from Cal., and *Charis australis*, *Lycaena striata* and *Thecla clytie* from Texas = 4 n. spp.

\* 958. S. B. (in *Nature*). Selective discrimination of insects. p. 90-91. [Dec., 1877.]

Insects are guided by odor rather than by color.

\* 959. C. E. BESSEY. Flights of spiders. p. 91. [Dec., 1877.]

*Lycosa* and other spiders wafted through the air upon their threads.

\* 960. J. W. CHICKERING. Insect ravages among the willows. p. 92. [Dec., 1877.]

Leaves of alpine species of *Salix* on Mt. Washington eaten by insects.

\* 961. W: H. EDWARDS. Descriptions of new species of Diurnal Lepidoptera found in North America. p. 101-105. [Feb., 1878.]

Describes *Melitaea bollii* from Texas, *Argynnis columbia* (H: Edwards) from British Columbia, and *Apatura antonia* from Texas and Arizona = 3 n. spp.

\* 962. S. S. RATHVON. The "wheel-bug," (*Reduvius novendrius*). p. 108-109. [Feb., 1878.]

Predatory and cannibalistic propensities of *Reduvius novenarius*.

\* 963. W: H. EDWARDS. Descriptions of new species of North American Lepidoptera. p. 115-119. [Mar., 1878.]

Describes *Pamphila rhena*, *P. rhesus*, *P. morrisoni*, *P. phylace*, *Amblyscirtes aenus*, *Pholisorapirus* from Southern Colorado; *Amblyscirtes nilus* from Texas = 7 n. spp.; the female of *Pamphila snowi* resembles the male, except in the absence of the stigma.

\* 964. S. S. RATHVON. Mandibular power of insects. p. 130-131. [Mar., 1878.]

Two imagoes of *Urocera cyaneus* cut a passage 10 cm. long through firm casimere cloth.

\* 965. C: R. DODGE. Scale insects of the peach. p. 131. [Mar., 1878.]

Twigs of *Amygdalus persica* covered with scales of *Lecanium persicae*; seasons of the insect.

\* 936. C. R. DODGE. A Colorado Yellow Jacket. p. 131. [Mar., 1878.]

Terrifying effect of an onslaught of *Vespa* sp., narrated in twenty-two verses.

\* 967. **Townend Glover.** Manuscript notes from my journal, or Illustrations of insects, native and foreign. Order Hemiptera, suborder Heteroptera, or plant-bugs. Washington, written & etched by Townend Glover; transferred to & printed from stone by J. C. Entwisle, 1876. [2] + 2 + 10 + 133 p. (p. 1-57bis, p. 58-132), 10 pl. (pl. 1-9 colored), printed only on one side of the sheet. 30.5 × 24. t 24 × 17. [Not published. Only 53 copies printed, for gratuitous distribution.] [Oct., 1876.]

Title; copyright. *a.* Introduction, p. 1-2. *b.* About 325 figures of about 257 imagos, 19 young and numerous anatomical details of about 240 species, pl. 1-10, each pl. with a p. of explanatory text. *c.* Arrangement of families &c. of the Heteroptera, or plant-bugs [Burmeister's arrangement (1835), p. 1-6, p. 16; Westwood's (1840), p. 7-9, p. 16; Amyot and Serville's (1843), p. 9-12, p. 16; Douglas and Scott's (1861-1865), p. 12-15, p. 17], p. 1-17. *d.* Alphabetical list of the families, & genera of Heteroptera mentioned in this work with synonyms, habits, food, habitat, &c. [includes, with others, all the species mentioned in Say's works, with the names of the genera to which they have more recently been removed], p. 18-73. *e.* Alphabetical list of predaceous or parasitic Heteroptera, the larvae, pupae, or perfect insects of which destroy other insects, p. 74-75. *f.* Alphabetical list of vegetable, and animal substances, frequented, injured, or destroyed, by Heteroptera, p. 76-85. *g.* Alphabetical list of insects, of other orders, either destroying Heteroptera, or destroyed by them, p. 86-87. *h.* Alphabetical list of the names of the authors and of authorities, or societies, &c., referred to in this work, p. 88-91. *i.* Abbreviations &c used in this work [with a diagram of three French inches divided into lines], p. 92. *j.* Remedies reported to be serviceable in destroying insects of the suborder Heteroptera or plant bugs, p. 93-96. *k.* Alphabetical list of [some principal] sections, families, and genera of the Hemiptera, Heteroptera, with derivation of names &c., &c. [compiled from the works of various authors, omitting many synonyms, and referring the genera to the families of Amyot and Serville's classification], p. 97-112. *l.* Alphabetical list of species, of the Hemiptera, Heteroptera [with translation of the names and referring the synonyms to their proper genera], p. 112-118. *m.* Genera as arranged in the entomological cabinet of the Museum of the Department of Agriculture, Washington, D. C., 1876 [with reference to the pages on which the genera are mentioned in Amyot and Serville's *Histoire naturelle des Hémiptères*, Paris, 1843], p. 119-123. *n.* Extracts

from the list of Hemiptera, of the region west of the Mississippi, including those collected by the Hayden explorations of 1873, by P. R. Uhler, Baltimore, Md., Washington, D. C., Jan. 1876 [giving Uhler's arrangement of the "families &c.," and referring to the pages on which the genera are mentioned in that work (see Rec., no. 568)], p. 124-127. *o.* Notes of the habits of Heteropterous insects, with the latest changes in the nomenclature, position and classification of the various families, subfamilies, genera and species [taken from Uhler's List (see Rec., no. 568), and referring to the pages of that list], p. 128-131. *p.* Errata and addenda, p. 132. *q.* List of [45] societies, and individuals, to whom a copy of this work has been sent (1876), p. 132.

\* 968. **Townend Glover.** Manuscript notes from my journal, or Entomological index, to names, &c., in Agricultural reports, with list of vegetable and animal substances injured or destroyed by insects, &c. Washington, written by Townend Glover; transferred to and printed from stone by J. C. Entwisle, 1877. Title-cover + title-p. + p. 1-79bis + p. 81-103, printed only on one side of the sheet. 30 × 23. t 22·5 × 16. [Not published. Only printed for gratuitous distribution.] [Dec., 1877.]

*a.* Entomological index to the Agricultural reports [with abstract of many of the passages referred to], p. 1-77. *b.* Insects to a greater or less degree beneficial, by destroying noxious insects [stating what insects they destroy], p. 78-79bis. *c.* Other agencies useful in the destruction of insects [animals, fungi and other plants, poisons and diseases; insects which bore in lead], p. 79bis. *d.* [List of vegetal and animal substances injured or destroyed by insects; list of articles, in the Reports, on cotton and on cotton insects], p. 81-101. *e.* Addenda and errata, p. 102-103. *f.* Blank for notes, p. 103.

\* 969. **Townend Glover.** Manuscript notes from my journal. — Cotton, and the principal insects, &c., frequenting or injuring the plant, in the United States. Washington, D. C. Written and etched by Townend Glover, transferred to and printed from stone by J. C. Entwisle, 1878. T.-p. + 2 p., 22 pl.; each pl. with explanation at bottom, all printed only on one side of the sheet. 31 × 25. t 27 × 16·5. [July, 1878.]

Introductory; list of some principal articles, relating to cotton, printed in the Reports of the U. S. Department of Agriculture, p. 1-2. *b.* Seeds, and young plants, pl. 1. *c.* Root, and disease commonly known as sore-shin, pl. 2. *d.* Rust of the leaf, as caused by fungus or by Acarus, pl. 3. *e.* Rust more developed, pl. 4. *f.* Blight, pl. 5. *g.* Aphis, pl. 6. *h.* Plusia, 2 spp.; Boarmia, pl. 7. *i.* Hyperchiria, pl. 8. *j.* *Lozotaenia rosaccana*,

*Laphrygma macra*, pl. 9. *k. Aletia argillacea*, pl. 10. *l. Lozotaenia gossypiana*, *Anthocoris insidiosus*, *Centrinus perscillus*, *Calocoris rapidus*, *C. bimaculatus*, pl. 11. *m.* Young flower bud, young boll, bud in its involucre or "square," pl. 12. *n.* Flower open first day; *Epicauta strigosa*, *E. vittata*, *E. ferruginea*, *Chauliognathus americanus*, *Ch. marginatus*, pl. 13. *o.* Young "squares" shed in consequence of non-impregnation occasioned by wet weather, pl. 14. *p.* Flower and young boll on second and third day; *Euryomia melancholica*, *E. sepulchralis*, *Trigonopeltastes delta*, *Podisus spinosus*, *Cimiculus obscurus*, pl. 15. *q.* Young bolls; *Leptoglossus phyllopus*, *Euschistus punctipes*, *Nezara pennsylvanicus*, *Largus succinctus*, pl. 16. *r.* Flower; *Heliothis armigera*, pl. 17. *s.* Boll; *H. armigera*, pl. 18. *t. Dysdercus suturellus*, pl. 19. *u.* Rotted bolls; *Colastus semitectus*, *Homalota?* sp., *Carpophilus hemipterus*; *Silvanus quvricollis* attacking maize also; fungoid growth on maize, pl. 20. *v.* Rusted bolls; *Tinea granella* (?), in maize also, pl. 21. *w.* Healthy boll and partially rusted boll, pl. 22.

\* 970. **C. V. Riley**, STATE ENTOMOLOGIST. Eighth annual report on the noxious, beneficial and other insects of the state of Missouri, made to the State Board of Agriculture, pursuant to an appropriation for this purpose from the legislature of the state. Jefferson City, 1876. 7 + 185 + 4 + p. 23.5 × 15.5. t 19 × 11.5. 55 fig. [June, 1876.]

Preface and Table of contents, p. iii-vii.

*a.* The Colorado potato beetle — *Doryphora 10-lineata* Say [damage during the year; migrations; generic name; natural enemies; remedies, especially Paris green; native home; poisonous qualities], p. 1-12, fig. 1-2. *b.* Canker worms [antithetic descriptions of *Paleacrita vernata* and *Anisopteryx pometaria*, defining the new genus *Paleacrita*; remedies], p. 12-22, fig. 3-15. *c.* The army worm — *Leucania unipuncta* Haw. [various applications of the vernacular name; past history of this species; sexual differences in the imago; description of all stages; habitat; oviposition; hibernation; habits and time of appearance of the larva; number of broods; comparison with *Prodenia autumnalis*; food-plants; conditions under which it becomes abundant; natural enemies; remedies], p. 22-56, fig. 16-38; p. 182-185. *d.* The Rocky Mountain locust — *Caloptenus spretus* Thomas [experience with it in 1875 in Mo., Ks., Nebr., Ia., Minn., Col., Dak., Mont., Wyom., Tex., Ind. Terr. and Manitoba; moulting; habits and migrations; native home; comparison with allied species; food-plants; changes in vegetation following the invasions; natural enemies; remedies, legislative and practical; use of locusts as food for man; fears and injuries caused by other locusts], p. 57-156, fig. 39-47. *e.* The grape phylloxera [oviposition of, description of female, of male and of egg of, and means against *Phylloxera vastatrix*], p. 157-168, fig. 48. *f.* The yucca borer. — *Megathymus yuccae* (Walker) [indefiniteness of classificatory divisions; biological, bibliographical and



descriptive details about the species; its affinities; its enemies], p. 169-182, fig. 49-55. *g.* Index, p. i-iv.

\* 971. **C: V. Riley**, STATE ENTOMOLOGIST. Ninth annual report on the noxious, beneficial and other insects of the state of Missouri, made to the State Board of Agriculture, pursuant to an appropriation for this purpose from the legislature of the state. Jefferson City, 1877. 7+129+3+p. 23×15. t 20×11.5. 32 fig.

Preface and Table of contents, p. iii-vii.

*a.* Insects which feed on plants of the genus *Ribes*, and their appropriation to the several species of this genus; treats especially of *Eufitchia ribe-aria* (p. 3-7, fig. 1-3), of *Nematus ventricosus* (p. 7-22, fig. 4-8) with a figure of *Podisus placidus* which preys upon it, and of *Pristiphora grossulariae* (p. 23-27, fig. 9). *b.* History, habits and description of *Emphytus maculatus*, which feeds upon *Fragaria*, p. 27-29, fig. 10. *c.* Habits, transformations and description of *Lophyrus abbotii* which feeds on *Pinus*; description of *Limneria lophyri* n. sp., parasitic in the larva of the *Lophyrus*, p. 29-32, fig. 11. *d.* Habits and description of *Lophyrus lecontei*, which feeds on *Pinus*, p. 32-34. *e.* Spread and present distribution of *Doryphora 10-lineata*, with a map of distribution; probability of and precautions against the introduction of the beetle into Europe; figure and description of *Uropoda americana*, parasitic on the beetle; value of various "potato pest poisons," p. 34-47, fig. 12-13. *f.* Oviposition, number of annual broods, longevity, hibernation and summary of the natural history of *Leucania unipuncta*, p. 47-50. *g.* Ravages, habits and natural history and description and figures of egg, larva and imago of *Leucania albilinea*; its natural enemies and means against it; description of *Anomalon apicale*, a parasite, p. 50-57, fig. 14-15. *h.* Detailed information of the invasions of *Caloptenus spretus*, during the year 1876, into all the regions subject to it; source and destination of swarms, distribution, rate of spread, direction of flight; oviposition and hatching of eggs; natural enemies and parasites, especially *Trombidium sericeum*, *Anthomyia radicum* var. *calopteni* (descr. and fig.), *Sarcophaga carnaria*, an undetermined ichneumon and two undetermined carabids (one figured and described), *Eraz bastardii* (fig.) and *Amblychila cylindriciformis* (fig.); experiments to test the effects of alternately freezing and thawing the eggs of *C. spretus*, of soaking and drying them, of exposing them to the air, of burying them, and of pressing the soil down over them; resolutions of the Omaha Conference [see Rec., no. 794]; active and legislative means against the locusts; prospects for the year 1877, p. 57-124, fig. 16-29. *i.* Description and figures of the eggs, egg-masses and larvæ of *Corydalus cornutus*; figures of the pupa and imago; figure of *Belostoma grandis* and of eggs, probably of this species, formerly supposed to be those of the *Corydalus*, p. 125-129, fig. 30-33. *j.* Habits of *Megathymus yuccae*, p. 129. Index, p. i-iii. Errata.

\*<sup>1</sup> 972. **Annual Report of the Entomological Society of the Province of Ontario**, for the year 1876. Printed by order of the Legislative Assembly. Toronto: 1877. 8vo. pg. 2, 58, fig. 1-15, 18, and 1 pl., contains the following, and nos. 973 to 978.

Title. *a.* Annual business reports and reports of the annual meetings of the Society and of the London and Montreal Branches, p. 1-6. *b.* Annual address of the President of the E. S. O. (by Wm. Saunders) (from Can. Entom., 1876, v. 8, p. 210-217) [collection exhibited by the Society at the Centennial Exhibition in Philadelphia, and notes on the other collections of insects shown there; rules of nomenclature discussed at the meeting of the A. A. A. S., at Buffalo], p. 6-10. *c.* Report of the Committee on Centennial Exhibition (by W. Saunders, Chairman) [with appended notice from *The Daily Graphic*—N. Y., Sept. 26, 1876—of the collection exhibited by the Society], p. 10-12. *d.* Meetings of the Entom. Club of the A. A. A. S. (from Can. Entom., 1876, v. 8, p. 176-185) [incl. address of Dr. J. L. Le Conte, Pres. of the Club], p. 12-17. *e.* Insects introduced by the Centennial Exhibition [see Rec. No. 845], p. 20-23. *f.* Index, p. 57-58.

\*<sup>1</sup> 973. H. HAGEN. On genera. p. 17-20.

Discusses the relations of *Artemia* and *Branchipus*, and those of *Daphnia*, *Cyclops* and *Canthocamptus*; advocates enlarging the characters of species and those of genera; list of characters not to be considered generic; generic characters.

\*<sup>1</sup> 974. W: SAUNDERS. On blistering beetles. p. 24-29, fig. 1, pl.

Treats of *Epicauta vittata*, *E. cinerea*, *E. atrata*, *Meloe angusticollis*, *Cysteodemus armatus*, *Mylabris cichorii*, *Macrobasis albida*, *M. atrivittata*, *M. segmentata*, *Cantharis vesicatoria*, *C. vulnerata*, *C. nuttalli*, *Pyrota mylabrina*, *Tergrodera erosa*, figuring all except *Epicauta atrata*; life-history of *Meloe*, mostly an abstract from Trans. Linn. Soc., v. 20; notes on *Meloe* about Toronto. [Essentially the same as Can. Entom., 1876, v. 8, p. 221-228, pl., and Can. Entom., 1877, v. 9, p. 11-12.]

\*<sup>1</sup> 975. C: J. S. BETHUNE. The destructive locust of the west. p. 29-34, fig. 2.

Brief introductory remarks and a reprint of "The migrations of the destructive locust of the west," by A. S. Packard, Jr., in Amer. Naturalist, 1877, v. 11, p. 20-29. Figures *Caloptenus femur-rubrum*.

\*<sup>1</sup> 976. W: SAUNDERS. On some of our common insects. p. 35-38, fig. 3-8.

Treats of *Actias luna*, *Deilephila chamaenerii*, *D. lineata*, *Papilio asterias*. [Essentially the same as Can. Entom., 1877, v. 9, p. 32-33, fig. 1; p. 63-67, fig. 2-5; with a brief sketch of *Papilio asterias* added.]

\*<sup>1</sup> 977. W: SAUNDERS. Notes of the year. p. 39-40, fig. 9.

Treats of *Heliophila unipuncta*, *Pempelia grossularia*, *Pieris rapae*.

<sup>1</sup> Record made by Mr. George Dimmock.

**Annu. Rept. Entom. Soc. Ontar., for 1876.**

\*1 978. JOS: WILLIAMS. Beneficial and injurious insects. p. 41-55, fig. 10-15, 18.

Treats of *Apis mellifica*, *Galleria cereana*, *Trupanea apivora*, *Pimpla annulipes*, *Tremex columba*, *Sigalphus curculionis*, *Porizon conotracheli*.

\*1 979. **Annu. Rept. Entom. Soc. Ontar.**, for the year 1877. Including reports on some of the noxious, beneficial and other insects of the province of Ontario. Prepared for the Honourable the Commissioner of Agriculture, on behalf of the Society. Printed by order of the Legislative Assembly. Toronto: 1877. 8vo. pg. iv, 59, fig. 1-50, and 1 pl., contains the following, and nos. 980 to 989.

Title, Index, p. i-iv. *a.* Annual business reports and reports of the annual meetings of the Society and of the London and Montreal Branches, (partly from Can. Entom., 1877, v. 9, p. 181-183, 187-189, 211-213), p. 1-4, 6-9. *b.* Annual address of the President (W. Saunders) (Can. Entom., 1877, v. 9, p. 183-187) [ravages of *Clisiocampa sylvatica*, migrations of *Pieris rapae* and of *Doryphora decemlineata*, the U. S. Entom. Comm., the Entom. Club of the A. A. A. S., progress and literature of entomology for the year 1877], p. 4-6. *c.* Proceedings of the Entom. Club of the A. A. A. S. (by A. G. Wetherby) (Can. Entom., 1877, v. 9, p. 172-174), p. 11-12. *d.* The U. S. Entom. Comm. (Can. Entom., 1877, v. 9, p. 81-84), p. 14-17. *e.* Recent entomological works (Can. Entom., 1877, v. 9, p. 137-138) [reviews of "Economic entomology" by Andrew Murray, and of the Ninth Annual rept. . . . insects of . . . Missouri, by C: V. Riley], p. 19. *f.* Catalogue of the Lepidoptera of America north of Mexico. By W. H. Edwards. Part I. Diurnals (by W. Saunders) (Can. Entom., 1877, v. 9, p. 97-98, 36-37, 80, 138) [reviews of the above-named work; of LeConte and Horn's Rhynchophora of America north of Mexico; of Glover's Manuscript notes from my journal, etc., Heteroptera, [see Rec. no. 967]; of The Rocky Mountain locust [see Rec. no. 794]; of Packard's Half hours with insects [see Rec., nos. 309 and 994]; of Scudder's Rept. upon the Orthoptera collected by the Wheeler Expedition, and notes on several other papers by the same author; and notice of "*Harpalus caliginosus*," by Franklin C. Hill], p. 19-21.

\*1 980. W. BRODIE. Experiments on the Colorado potato beetle. p. 9-10.

Food-plants and quantity of food required by *Doryphora decemlineata*.

\*1 981. A: R. GROTE. A new lepidopterous insect injurious to vegetation. p. 13-14.

Description of *Nephoteryx (Dioryctria) zimmermani*, a new species of Pyralidae destructive to pines about Buffalo, N. Y. [Same as Can. Entom., 1877, v. 9, p. 161-163.]

<sup>1</sup>Record made by Mr. George Dimmock.



\*1 982. C. G. SIEWERS. Notes on larvæ — Fondness for water — Hints to beginners. p. 17-18.

Treats of larvæ of *Arctia isabella*, *Epantheria* and others. [Same as Can. Entom., 1877, v. 9, p. 127-129.]

\*1 983. PROF. J. A. T. BELL. How to destroy cabinet pests. p. 18.

[From Can. Entom., 1877, v. 9, p. 139-140.] Uses cyanide of potassa (KCN) and sulphuric acid ( $H_2SO_4$ ). [The hydrocyanic acid vapor generated by this mixture is a very dangerous poison, and should never be used except by an experienced chemist. G. D.]

\*1 984. C. J. S. BETHUNE. A few common wood-boring beetles. p. 22-30, fig. 1-3, 1 pl.

Treats of and figures *Monohammus scutellatus*, *Clytus speciosus*, *Orthosoma cylindricum*, *Clytus robiniae*, *Chrysobothris femorata*, *Saperda candida*, *Monohammus confusor*, *Oberea tripunctata*. [From Can. Entom., 1877, v. 9, p. 221-226, 1 pl.]

\*1 985. W. SAUNDERS. The aphides or plant lice. p. 31-29, fig. 4-20.

Treats of generation of aphides; figures and treats of *Aphis mali*, *Eriosoma pyri*, *Aphis cerasi*; and their insect enemies, *Pipiza radicum* [corr.], *Coccinella novemnotata*, *C. bipunctata*, *Hippodamia maculata*, *H. tredecimpunctata*, *Coccinella munda*, *Hippodamia convergens*, *Mysia quindecimpunctata*, *Chilocorus bivulnerus* and species of *Chrysopa* and *Syrphus*.

\*1 986. B. GOTT. Report on some of our fruit insect enemies. p. 40-47, fig. 21-36.

Treats of *Clisiocampa americana*, *Aegeria* ? *tipuliformis*, *Nematus ventricosus*, *Pempelia grossularia*, *Phyllophaga quercina*, *Agrotis devastator*, *Doryphora decemlineata*, *Pelidnota punctata*, *Haltica chalybea*, *Phylloxera vastatrix*, *Eriosoma*, *Carpocapsa pomonella*, *Conotrachelus nenuphar*, *Pieris rapae*, *Arctia isabella*; figures of most of the above species; an insect register for 1877.

\*1 987. JOS. WILLIAMS. On grape vine galls. p. 48-51, fig. 37-41.

Figures and treats of galls made by Cecidomyiidae.

\*1 988. JOS. WILLIAMS. Dragon flies. p. 52-55, fig. 42-49.

Treats of *Libellula trimaculata*, *L. quadrimaculata*, *Diplax rubicundula*, *D. berenice*, *D. elisa*, *Nanophya bella*, *Agrion saucium*.

\*1 989. C. J. S. BETHUNE. The Hessian fly. p. 56-59, fig. 50.

Treats of *Cecidomyia destructor*.

990. **N. H. King** and **H. A. King**. The bee-keeper's text book. 23d ed. New York, King and Slocum, 1877. 139 p., ill.

Published in German and English; "has been thoroughly revised, and embraces the latest discoveries and improvements in bee keeping; and, in short, just the information most useful to the apiarian."—*Field and Forest*, 1878, v. 3, p. 134. [Not seen by the recorder.]

\*<sub>1</sub> 991. **L. Provancher**. Petite faune entomologique du Canada précédée d'un traité élémentaire d'entomologie. Volume I — Les coléoptères. Québec, 1877. 12mo. pg. viii, 785, with 52 figures. [June, 1877.]

Title; Preface [a patriotic appeal for the study of the Canadian fauna] p. i–viii. Introduction [definitions], p. 1–3. Anatomy of insects: head, p. 5–31; thorax, p. 31–58; abdomen, p. 58–60; interior organization, p. 60–65. Metamorphoses of insects: general and classification into orders, p. 66–69; egg, p. 69–73; larva, p. 73–78; nymph, p. 79–82; perfect insect, p. 82–87. Functions of the relative life: general, p. 87–88; touch, p. 88; taste, p. 89; smell, p. 89–91; hearing and sight, p. 91. Faculty of emitting sound among certain insects, p. 92–94. Instinct and intelligence of insects, p. 95–106. The part of the insect in the economy of creation, p. 106–112. Classification [definition of species and criticism of Darwin], p. 113–123.

Entomological fauna of Canada: introductory, p. 127–130; Coleoptera [characters and synoptic table of 54 families], p. 130–138; descriptions of 54 families, 418 genera, and 873 species of Coleoptera of Canada in systematic order, and mention of other species attributed to Canada [the (2) new genera and (7) new species described are *Athous bipunctatus* [corr.], *Micronychus*, *M. sulcatus*, *Eriirhinus viridis*, *Attelabus maculatus*, *Homogaster*, *H. quebecensis* [Elatridae], *Leptura nitidipennis* [Cerambycidae], *Anatis canadensis* [Coccinellidae]. [For synonymy see Rec. No. 992.] Under each family are its characters, a synopsis of its genera; under the genus, its characters, a synopsis of the species if numerous, notes on habitats; under the species, its description and notes on its rarity. The French and scientific names are both given, (the former usually a direct translation of the latter), p. 138–705. Additions to the coleopterous fauna of the province of Quebec [made during the printing of the preceding pages]; describes 1 family, 31 genera, 90 (*Philonthus longipennis* [Staphylinidae] = 1 new) species; adds a few synoptic tables], p. 707–756. Vocabulary, p. 757–765. Contents, Index of genera and species, p. 767–785. Errata, [p. 786].

\*<sub>1</sub> 992. **L. Provancher**. Additions et corrections à la faune coléoptérologique de la province de Québec. 1877. Québec: 1877. 8vo. pg. 38. [Jan., 1878.]

Title, Preface, p. 1–4. Additions [1 family, 32 genera, and 89 species] and corrections [including the following: *Philonthus longipennis* Prov. = *Ph.*

<sup>1</sup> Record made by Mr. George Dinmock.

*sordidus* Grav.; *Micronychus sulcatus* Prov.=*Cyphonimus dorsalis* Horn; *Erirhinus viridis* Prov.=*Phytonomus nigrirostris* Fab.; *Homogaster quebecensis* Prov.=*Piazurus subfasciatus* Lec.], p. 5-36. Index, p. 37-38. [See Rec. No. 991.]

\* 993. **Cyrus Thomas**, STATE ENTOMOLOGIST. Sixth report of the State Entomologist (Walsh, 1. Le Baron, 4. Thomas, 1.) on the noxious and beneficial insects of the state of Illinois. — The first biennial report by Cyrus Thomas. — Springfield, Ill., 1877. 174 + 4 + 2 + p., 31 fig. 22.5 × 14.5. t 18.3 × 10.8.

Part I. Report, p. 1-62. *a.* Plan of work, acknowledgments, general recommendations, p. 3-7. *b.* Horticultural entomology [directions for planting and tending nurseries and orchards, so as to preserve them from insects and diseases; lists of useful, doubtful and noxious birds and useful insects], p. 8-15. *c.* History, description and habits of Anisopteryx; remedies, p. 16-21. *d.* Descriptions and histories of wire-worms [Elateridae]; remedies, p. 21-32. *e.* Habits, descriptions and lists of coleopterous, lepidopterous and hymenopterous borers; synoptical table of wood-boring larvæ; remedies, p. 32-44. *f.* Occurrence of *Caloptenus atlantis* in Illinois; breeding grounds and migrations of *C. spretus* and *C. differentialis*, means against locusts, p. 44-56. *g.* Habits and oviposition of *Leucania unipuncta*, p. 56-59. *h.* Description and geographical distribution of *Murgantia histrionica*, p. 59-60. *i.* Description of larva and imago of *Ceramica picta*, p. 60. *j.* Description of larva of *Selandria rubi*, means against this and against *Nematus ventricosus*, p. 61.

Part II. The introduction to, and first part of, a manuel [*sic*] of economic entomology for the state of Illinois. — The part herein present includes only the Coleoptera, or beetles [definition of insects and of their several orders, list of their important families, description of the developmental stages and of the structure of imagos, directions for the identification of injurious species, characters of the several subdivisions of Coleoptera; descriptions, habits and food of about 112 species of Coleoptera, beneficial or injurious, with means against many of them], p. 63-174, fig. 1-31. List of trees, plants and other substances injured by insects described in this report, with names of the species injuring, p. 1-4. Index, p. 1-2. Errata.

\* 994. **A. S. Packard, Jr.** Half hours with insects. Boston, Estes and Lauriat, 1877. 8 + 384 p., 2 pl. (1 pl. colored). 20.5 × 14. t 14.5 × 9. 260 fig.

[See Rec., no. 309.]

10. Insects as mimics. p. 257-294, fig. 196-229.

Use of mimicry as a protection and disguise; insects which mimic their surroundings; insects which mimic other insects; prophetic and synthetic types of insects.

11. Insects as architects. p. 295-320, fig. 230-250, pl.

Description of pits, holes, galls and dwellings made or inhabited by insects.

12. The social life of insects. p. 321-352, fig. 251-259.

Organization and work of colonies of termites, ants, wasps and bees.

13. Mental powers of insects. p. 353-384, fig. 260.

Activity, senses, nervous organization, volition, reason, temper, timidity, faculties, memory, power of communication, educability, solicitude and loyalty of insects.

[We are requested by the author to publish the following corrections of errors detected in this work. Page 187, in explanation of fig. 187, *for* Bucculating *read* Bucculatrix; p. 289, line 23, *for* Disippus *read* Archippus, and in line 25, *for* Archippus *read* Disippus; p. 305, line 13, *for* sumac *read* cottonwood; p. 306, in explanation of fig. 236, *for* sumac gall *read* vagabond gall.]

\* 995. **Allen Whitman.** Report [of the Geological and Natural History Survey] on the Rocky Mountain locust. For 1876. St. Paul, Pioneer Press Co., 1877. 43 p. 23 × 15. t 18 × 10. map 50 × 43.

Etymology of the word "locust"; frequency of locust invasions; liability of Minnesota to invasions; history of past invasions; naturalization and degeneration of the locusts in Minnesota; source, destination and direction of flight of the locusts; area in which eggs have been deposited (map); time of depositing eggs; parasites and enemies; ravages of the locusts; practical methods of contending with the locusts young and old.

\* 996. **Herman Strecker.** Butterflies and moths of North America, with full instructions for collecting, breeding, preparing, classifying, packing for shipment, etc., a complete synonymical catalogue of Macrolepidoptera, with a full bibliography, to which is added a glossary of terms and an alphabetical and descriptive list of localities. — Diurnes. — Reading, Pa., 1878. [4] + 2 + 283 p. t 19.5 × 11.9. 2 pl. t 23.5 × 14.6. 24.5 × 16.

a. Title, copyright, dedication, verses. b. Contents, p. 1-2. c. Preface [request for correspondents and for specimens of Lepidoptera and Coleoptera], p. 1-6. d. Capturing day butterflies (Rhopaloceres) [implements and their use, time of day, localities, clothing, food], p. 7-10. e. Capturing night butterflies or moths (Heteroceres) [localities, baits, rules], p. 11-12. f. Preparing for the collection [spreading the wings], p. 12-14. g. Cabinets, &c., for containing Lepidoptera [size and construction of drawers or boxes], p. 14-15. h. Forceps [indispensable], p. 15. i. Pins [sizes], p. 16. j. Arranging in the cabinet [topography], p. 16-17. k. Labeling [description and order of labels], p. 17-19. l. Cleaning [from grease], p. 19-20. m. Relaxing and expanding, p. 20-21. n. Repairing, p. 21. o.

Museum pests [detection and destruction], p. 21. *p.* Packing and transportation, p. 22-23. *q.* Packing . . . for transmission to foreign parts [packing, making lists, expresses, custom-houses], p. 24-28. *r.* Rearing . . . from the egg and caterpillar [getting eggs, keeping pupæ, varieties], p. 28-31. *s.* Final remarks [sending money, price of specimens], p. 31-32. *t.* Structure of butterflies and moths, as shown on plate 1, figs. 1-10, p. 33-34. *u.* Terms and abbreviations used in works on Lepidoptera, p. 35-45. *v.* Alphabetical and explanatory list of localities of which the lepidopterous fauna is more or less known, p. 46-66. *w.* Catalogue of the American Macrolepidoptera north of Mexico [comprising Rhopaloeera only; full bibliography and synonymy, with localities, food-plants and descriptions of varieties, p. 67-192. *x.* Corrigenda, p. 193-194. *y.* Index to catalogue, p. 195-208. *z.* Bibliography [titles of all the articles upon Lepidoptera published by authors who have treated of the Rhopaloeera of various parts of the world, as well as all the titles of articles upon the N. A. lepidopterous fauna; with biographical notes], p. 209-283.

\*<sup>1</sup> 997. The **Amer. Nat.** [see Rec., nos. 264-307], v. 9, from p. 573, contains the following, and nos. 998 and 999.

*a.* Cave-inhabiting spiders, p. 663-664. *b.* Digestion in insects, p. 664-665.

\*<sup>1</sup> 998. A. S. PACKARD, JR. Life histories of the crustacea and insects. p. 583-622, fig. 235-284.

Brief enumeration of the characters of crustacea and of insects (tracheata), embryology of many forms, with figures of different stages and of adult forms. Numerous references to the literature of the subject.

\*<sup>1</sup> 999. MRS. MARY TREAT. Plants that eat animals. p. 658-662, fig. 306-308.

Capture of larvæ of Chironomus and other insects in the bladders of Utricularia.

\*<sup>1</sup> 1000. The **Amer. Nat.**, v. 10, contains the following, and Nos. 1001 to 1021.

*a.* Notice of Scudder's Fossil butterflies [see Rec., no. 591], p. 53, 106-107; of Edwards' Butterflies of North America, p. 108-109; of Hentz's Spiders of the United States [see Rec., no. 790], p. 170; of Grote's Cheek list of the . . . Noctuidæ of America, Part I [see Rec., no. 345], p. 312; of Tullberg's Monograph of the Poduridae of Sweden, p. 375; of Riley's Eighth report on the noxious insects of Missouri [see Rec., no. 970], p. 485-486; of Packard's Monograph of the . . . Geometrid moths of the United States, p. 568; of Lacordaire and Chapuis' Genera des Coléoptères, p. 568-569; of Cook's Manual of the apiary, p. 621-622; of Mayer's Ontogeny and phylogeny of insects (by A. S. Packard, Jr.), p. 688-691. *b.* Proceedings of societies: Acad. Nat. Sci. Philad. [Horn on a method of distinguishing sexes in Amblychila], p. 632; Acad. Sci. St. Louis [Riley

<sup>1</sup> Record made by Mr. George Dimmock.



## Amer. Nat., v. 10.

on locusts, and on *Carpocapsa saltitans*; Broadhead on locusts; Riley on Paris green and its poisonous effects, and on agave wood for lining insect boxes], p. 125-126 [Riley on oviposition of *Leucania unipuncta*], p. 508-509 [Riley on the periodical cicada, on the cocoons of *Sericaria mori* reared on osage orange, on *Leucania albilinea*, and on a specimen of *Doryphora decemlineata* covered with mites], p. 635-636; Bost. Soc. Nat. Hist. [Scudder on the geographical distribution of *Vanessa cardui* and *V. atalanta* (see Rec., nos. 1013 and 1020)], p. 61; Buff. Soc. Nat. Sci. [Grote on Noctuidæ from the Pacific Coast, and on *Polenta tepperi* from Texas], p. 128; Cal. Acad. Sci. [H. Edwards on *Darlingtonia californica* and the insects taken by it], p. 127 [Dr. Hale on a milk-white spider which is the exact counterpart of the flower Medrono], p. 574; Cambridge Entom. Club [Hagen on *Termes flavipes*, Scudder on osmateria of butterflies], p. 62 [Schwarz on Rhynchophora], p. 127-128 [Scudder on glands in the thorax of *Anisomorpha buprestoides* (see PSYCHE, v. 1, p. 137-140), Stebbins on a deformed *Papilio machaon*, Scudder on *Megathymus yuccae*, Fewkes on glands of *Autolyca pallidicornis*, Dimmock on bleaching wings of Lepidoptera], p. 255-256 [Burgess on pupæ of *Eudamus tityrus*, Mann on larvæ of *Anisopteryx pometaria*, Scudder on *Gryllus domesticus*, Hagen on amber, Scudder on the species of *Cyaniris*, Hagen on an insect allied to *Mantispa* and living in wasps' nests, Scudder on Forficularians (see PSYCHE, v. 1, p. 177-178), Austin on captures of *Dytiscidae*], p. 507-508. c. Perforation of orange skins by moths [of the genus *Ophideres*, from Australia] (from the *Monthly Microscopical Journal*), p. 50. d. A remarkable forage for bees [using the epispores of *Uredo luminata* in place of pollen grains] (by J. L. Zabriskie, in the *Bee Keepers' Magazine*), p. 122. e. The cotton worm, p. 303. f. Insects of the Kerguelen Island, p. 482. g. Carnivorous plants [and some of the insects taken by them] (by W. J. Beal), p. 588-591. h. Notice of death of Edward Newman, of London, p. 700. i. Meeting of the governors of the western states and territories in Omaha, Neb., 25 Oct., 1876, to devise means to rid the country of the grasshopper pests, p. 754-755.

\*1 1001. REV. SAMUEL LOCKWOOD. The Florida chameleon. p. 4-16.

Some insects eaten, and *Doryphora decemlineata* refused by *Anolis principalis*.

\* 1002. J. M. MULLIGAN. Intelligence in the hawk moth. p. 50.

Hawk moths observed never to go twice to the same flower of *Oenothera lamarckiana*.

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CORRECTION. In no. 48 of PSYCHE, v. 2, p. 131, line 3, for 968, read 970; on p. 135, lines 21-26, for 973 read 979, for 975 read 990, for 976 read 992, for 974 read 993.

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